

Health Update:

Update 1: Zika Virus Infections

January 20, 2016

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.health.mo.gov>

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

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Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

Health Update
January 20, 2016

**FROM: PETER LYSKOWSKI
ACTING DIRECTOR**

SUBJECT: Update 1: Zika Virus Infections

On January 15, 2016, the Centers for Disease Control and Prevention (CDC) released a Health Advisory via the Health Alert Network (HAN) entitled, "Recognizing, Managing, and Reporting Zika Virus Infections in Travelers Returning from Central America, South America, the Caribbean, and Mexico" (CDC HAN-00385). On January 16, 2016, via the Missouri Health Notification System, the Missouri Department of Health and Senior Services (DHSS) forwarded this CDC Health Advisory along with additional reporting and testing information specific to Missouri medical providers and local public health agencies. This notification is available at:

<http://www.health.mo.gov/emergencies/ert/alertsadvisories/pdf/cdcHAd11616.pdf>

Following the Health Advisory release, CDC provided additional information related to Zika virus infection:

1. Interim Guidelines for Pregnant Women During a Zika Virus Outbreak – United States, 2016. *Morbidity and Mortality Weekly Report (MMWR)*, Early Release/January 19, 2016/65(2); 1-4. These guidelines include recommendations for pregnant women considering travel to an area with Zika virus transmission, and recommendations for screening, testing, and management of pregnant returning travelers. They are available at: http://www.cdc.gov/mmwr/volumes/65/wr/mm6502e1er.htm?s_cid=mm6502e1er_e
2. Updated Diagnostic Testing for Zika, Chikungunya, and Dengue Viruses in US Public Health Laboratories. CDC Memorandum, January 13, 2016. This document provides updated guidelines for conducting diagnostic testing for Zika, chikungunya, and dengue viruses. It is available at:

http://www.afpl.org/Materials/CDCMemo_Zika_Chik_Deng_Testing_011916.pdf

Please remember that submission of specimens for Zika, chikungunya, and dengue virus testing requires prior approval by DHSS as described on pages 4-5 of the CDC Health Advisory with additional Missouri-specific information noted above
(<http://www.health.mo.gov/emergencies/ert/alertsadvisories/pdf/cdcHAd11616.pdf>).

For More Information

- General information about Zika virus and disease (CDC): <http://www.cdc.gov/zika>
- Countries and territories with Zika autochthonous transmission reported in the Americas (Pan American Health Organization): http://www.paho.org/hq/index.php?option=com_topics&view=article&id=427&Itemid=41484&lang=en

Questions Regarding This Health Update

Direct questions to DHSS' Office of Veterinary Public Health, Monday through Friday, 8:00AM to 5:00PM, 573/526-4780; after hours/weekends, 800/392-0272.

Office of the Director
912 Wildwood
P.O. Box 570
Jefferson City, MO 65102
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Fax: (573) 751-6041
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Health Update:

Update 2: Zika Virus Infections

January 27, 2016

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Health Update
January 27, 2016

**FROM: PETER LYSKOWSKI
ACTING DIRECTOR**

SUBJECT: Update 2: Zika Virus Infections – “Interim Guidelines for the Evaluation and Testing of Infants with Possible Congenital Zika Virus Infection – United States, 2016”

On January 15, 2016, the Centers for Disease Control and Prevention (CDC) released a **Health Advisory** entitled, “Recognizing, Managing, and Reporting Zika Virus Infections in Travelers Returning from Central America, South America, the Caribbean, and Mexico.”

On January 16, 2016, the Missouri Department of Health and Senior Services (DHSS) forwarded this CDC Health Advisory along with additional reporting and testing information specific to Missouri medical providers and local public health agencies. This notification is available at:

<http://www.health.mo.gov/emergencies/ert/alertsadvories/pdf/cdcHAd11616.pdf>.

On January 20, 2016, DHSS released **Health Update 1: Zika Virus Infections**, which included references to two new documents:

1. Interim Guidelines for Pregnant Women During a Zika Virus Outbreak – United States, 2016. *Morbidity and Mortality Weekly Report (MMWR)*, Early Release/January 19, 2016/65(2); 1-4. This is available at: http://www.cdc.gov/mmwr/volumes/65/wr/mm6502e1er.htm?s_cid=mm6502e1er_e
2. Updated Diagnostic Testing for Zika, Chikungunya, and Dengue Viruses in US Public Health Laboratories. CDC Memorandum, January 13, 2016. This is available at: http://www.afhl.org/Materials/CDCMemo_Zika_Chik_Deng_Testing_011916.pdf

Please remember that submission of specimens for Zika, chikungunya, and dengue virus testing require prior approval by DHSS as described on pages 4-5 of the CDC Health Advisory with additional Missouri-specific information noted above (<http://www.health.mo.gov/emergencies/ert/alertsadvories/pdf/cdcHAd11616.pdf>).

NEW! On January 26, 2016, CDC released, “Interim Guidelines for the Evaluation and Testing of Infants with Possible Congenital Zika Virus Infection – United States, 2016.” *MMWR*, Early Release/January 26, 2016/65(3);1-5. This is available at:

http://www.cdc.gov/mmwr/volumes/65/wr/mm6503e3er.htm?s_cid=mm6503e3er.htm_w

For More Information

- General information about Zika virus and disease (CDC): <http://www.cdc.gov/zika>
- Countries and territories with Zika autochthonous transmission reported in the Americas, Pan American Health Organization (PAHO): http://www.paho.org/hq/index.php?option=com_topics&view=article&id=427&Itemid=41484&lang=en

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Health Update:

Update 3: Zika Virus Infections

February 5, 2016

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**Health Update
February 5, 2016**

**FROM: PETER LYSKOWSKI
ACTING DIRECTOR**

SUBJECT: Update 3: Zika Virus Infections – New CDC Guidelines

NEW! On February 5, 2016, the Centers for Disease Control and Prevention (CDC) issued new guidelines for preventing sexual transmission of Zika virus, and also issued an update to previously issued guidelines relating to pregnant women and women of reproductive age with possible Zika virus exposure.

1. Interim Guidelines for Prevention of Sexual Transmission of Zika Virus – United States, 2016. This is available at:

<http://www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6505e1er.pdf>

This new interim guidance on preventing sexual transmission of Zika virus has been issued following confirmation through laboratory testing of the first case of Zika virus infection in a non-traveler in the continental United States during the current Zika outbreak. It is noted that although sexual transmission of Zika virus infection is possible, mosquito bites remain the primary way that Zika virus is transmitted. CDC expects to update this interim guidance as new information becomes available.

2. Update: Interim Guidelines for Health Care Providers Caring for Pregnant Women and Women of Reproductive Age with Possible Zika Virus Exposure – United States, 2016. This is available at:

<http://www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6505e2er.pdf>

These updated guidelines for health care providers recommend that pregnant women without symptoms of Zika virus disease can be offered testing 2-12 weeks after returning from areas with ongoing Zika virus transmission.

Recommendations for pregnant women with a clinical illness consistent with Zika virus disease during, or within 2 weeks of, travel to such areas are unchanged from the previous CDC recommendations that were released on January 19, 2016.

For More Information

- Current information from CDC on Zika, including countries and territories with active Zika virus transmission, is available at:
<http://www.cdc.gov/zika/index.html>
- CDC guidance for health care providers is available at:
<http://www.cdc.gov/zika/hc-providers/index.html>
- Links to previous Health Advisories/Updates on Zika sent by the Missouri Department of Health and Senior Services (DHSS) are available at:
<http://health.mo.gov/emergencies/ert/alertsadvisories/index.php>

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Health Update:

Update 4: Zika Virus Infections

February 19, 2016

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Health Update
February 19, 2016

**FROM: PETER LYSKOWSKI
ACTING DIRECTOR**

SUBJECT: Update 4: Zika Virus Infections – New CDC Guidelines

NEW! On February 19, 2016, the Centers for Disease Control and Prevention (CDC) released updated guidance, *Update: Interim Guidelines for Health Care Providers Caring for Infants and Children with Possible Zika Virus Infection – United States, February 2016*, available at <http://www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6507e1er.pdf>.

This guidance updates previous interim guidelines for U.S. health care providers caring for infants born to mothers who traveled to or resided in areas with Zika virus transmission during pregnancy, and expands guidelines to include infants and children with possible acute Zika virus disease. It includes a new recommendation for routine care for infants born to mothers who traveled to or resided in areas with Zika virus transmission during pregnancy but did not receive Zika virus testing, when the infant has a normal head circumference, normal prenatal and postnatal ultrasounds (if performed), and normal physical examination.

Acute Zika virus disease should be suspected in an infant or child aged less than 18 years who: (1) traveled to or resided in an affected area within the past two weeks, and (2) has two or more of the following manifestations: fever, rash, conjunctivitis, or arthralgia. Because maternal-infant transmission of Zika virus during delivery is possible, acute Zika virus disease should also be suspected in an infant during the first two weeks of life: (1) whose mother traveled to or resided in an affected area within two weeks of delivery, and (2) who has two or more of the following manifestations: fever, rash, conjunctivitis, or arthralgia. Evidence suggests that Zika virus illness in children is usually mild.

As an arboviral disease, Zika virus disease is nationally notifiable. Health care providers should report suspected cases of Zika virus disease to their local or state health department to arrange for testing and so that action can be taken to reduce the risk for local Zika virus transmission.

For More Information

- Current information from CDC on Zika, including countries and territories with active Zika virus transmission, is available at:
<http://www.cdc.gov/zika/index.html>
- CDC guidance for health care providers is available at:
<http://www.cdc.gov/zika/hc-providers/index.html>
- Links to previous Health Advisories/Updates on Zika sent by the Missouri Department of Health and Senior Services (DHSS) are available at:
<http://health.mo.gov/emergencies/ert/alertsadvories/index.php>

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Health Update:

Update 5: Zika Virus Infections – Updates on Cases in Pregnant Women and on Sexual Transmission

February 29, 2016

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.health.mo.gov>

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Health Update
February 29, 2016

**FROM: PETER LYSKOWSKI
ACTING DIRECTOR**

SUBJECT: Update 5: Zika Virus Infections – Updates on Cases in Pregnant Women and on Sexual Transmission

NEW! On February 26, 2016, the Centers for Disease Control and Prevention (CDC) released, *Zika Virus Infection Among U.S. Pregnant Travelers — August 2015–February 2016*, which is available at:

http://www.cdc.gov/mmwr/volumes/65/wr/mm6508e1er.htm?s_cid=mm6508e1er.htm_w

After reports of microcephaly and other adverse pregnancy outcomes in infants of mothers infected with Zika virus during pregnancy, CDC issued a travel alert on January 15, 2016, advising pregnant women to consider postponing travel to areas with active transmission of Zika virus. On January 19, CDC released interim guidelines for U.S. health care providers caring for pregnant women with travel to an affected area, and an update was released on February 5.

As of February 17, CDC had received reports of nine pregnant travelers with laboratory-confirmed Zika virus disease; 10 additional reports of Zika virus disease among pregnant women are currently under investigation. No Zika virus-related hospitalizations or deaths among pregnant women were reported. Pregnancy outcomes among the nine confirmed cases included two early pregnancy losses, two elective terminations, and three live births (two apparently healthy infants and one infant with severe microcephaly); two pregnancies (approximately 18 weeks' and 34 weeks' gestation) are continuing without known complications. This report summarizes findings from the nine women with confirmed Zika virus infection during pregnancy and also includes case reports for four women with various clinical outcomes.

U.S. health care providers caring for pregnant women with possible Zika virus exposure during pregnancy should follow CDC guidelines for patient evaluation and management, found at <http://www.cdc.gov/zika/hc-providers/index.html>. Zika virus disease is a nationally notifiable condition. CDC has developed a voluntary registry to collect information about U.S. pregnant women with confirmed Zika virus infection and their infants. Information about the registry is in preparation and will be available on the CDC website.

NEW! On February 26, 2016, CDC released, *Transmission of Zika Virus Through Sexual Contact with Travelers to Areas of Ongoing Transmission — Continental United States, 2016*, which is available at:

http://www.cdc.gov/mmwr/volumes/65/wr/mm6508e2er.htm?s_cid=mm6508e2er_e

Zika virus is a flavivirus closely related to dengue, West Nile, and yellow fever viruses. Although spread is primarily by *Aedes* species mosquitoes, two instances of sexual transmission of Zika virus have been reported and replicative virus has been isolated from semen of one man with hematospermia. On February 5, 2016, CDC published recommendations for preventing sexual transmission of Zika virus. Updated prevention guidelines were published on February 23. During February 6-22, 2016, CDC received reports of 14 instances of suspected sexual transmission of Zika virus. Among these, two laboratory-confirmed cases and four probable cases of Zika virus disease have been

identified among women whose only known risk factor was sexual contact with a symptomatic male partner with recent travel to an area with ongoing Zika virus transmission. Two instances have been excluded based on additional information, and six others are still under investigation. This report summarizes findings from the six confirmed and probable cases of Zika virus infection and also includes case reports for three of these six patients.

CDC guidelines for prevention of sexual transmission of Zika are available at <http://www.cdc.gov/zika/hc-providers/index.html>.

For More Information

- Current information from CDC on Zika, including countries and territories with active Zika virus transmission, is available at: <http://www.cdc.gov/zika/index.html>.
- CDC guidance for health care providers is available at: <http://www.cdc.gov/zika/hc-providers/index.html>.
- Links to previous Health Advisories/Updates on Zika sent by the Missouri Department of Health and Senior Services (DHSS) are available at: <http://health.mo.gov/emergencies/ert/alertsadvisories/index.php>.

Questions Regarding This Health Update

Missouri health care providers and public health practitioners: For questions regarding Zika testing of patients, please contact DHSS' Bureau of Communicable Disease Control and Prevention, Monday through Friday, 8:00AM to 5:00PM, at 573-751-6113; after hours/weekends, 800-392-0272 (24/7). For all other questions on Zika, contact DHSS' Office of Veterinary Public Health, Monday through Friday, 8:00AM to 5:00PM, 573-526-4780; after hours/weekends, 800-392-0272 (24/7).

Health Update:

Update 6: Zika Virus Infections – Updates on Recommendations Regarding Timing of Pregnancy After Zika Exposure and on Prevention of Sexual Transmission

March 30, 2016

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.health.mo.gov>

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Health Update
March 30, 2016

**FROM: PETER LYSKOWSKI
ACTING DIRECTOR**

SUBJECT: Update 6: Zika Virus Infections – Updates on Recommendations Regarding Timing of Pregnancy After Zika Exposure and on Prevention of Sexual Transmission

NEW! On March 25, 2016, the Centers for Disease Control and Prevention (CDC) released, *Update: Interim Guidance for Health Care Providers Caring for Women of Reproductive Age with Possible Zika Virus Exposure - United States, 2016*, which is available at:

http://www.cdc.gov/mmwr/volumes/65/wr/mm6512e2er.htm?s_cid=mm6512e2er_w

This publication provides guidance for health care professionals for counseling patients about pregnancy planning and the timing of pregnancy after possible exposure to Zika virus. This guidance is based on limited available data on persistence of Zika virus RNA in blood and semen. Women who have Zika virus disease should wait at least 8 weeks after symptom onset to attempt conception, and men with Zika virus disease should wait at least 6 months after symptom onset to attempt conception. Women and men with possible exposure to Zika virus but without clinical illness consistent with Zika virus disease should wait at least 8 weeks after exposure to attempt conception. Possible exposure to Zika virus is defined as travel to or residence in an area of active Zika virus transmission (<http://www.cdc.gov/zika/geo/active-countries.html>), or sex without a condom with a man who traveled to or resided in an area of active transmission. Women and men who reside in areas of active Zika virus transmission should talk with their health care provider about attempting conception. This guidance also provides updated recommendations on testing of pregnant women with possible Zika virus exposure.

NEW! On March 25, 2016, CDC released, *Update: Interim Guidance for Prevention of Sexual Transmission of Zika Virus - United States, 2016*, which is available at:

http://www.cdc.gov/mmwr/volumes/65/wr/mm6512e3er.htm?s_cid=mm6512e3er_w

Recommendations included in this publication replace the previously issued recommendations and are updated to include time intervals after travel to areas with active Zika virus transmission or after Zika virus infection for taking precautions to reduce the risk for sexual transmission.

The recommendations for men who live in or travel to an area with active Zika virus transmission who have a pregnant partner remain the same, i.e., CDC recommends that men with a pregnant partner should use condoms every time they have sex or not have sex for the duration of the pregnancy.

The updated guidance includes new timeframes for men and their non-pregnant partners based on the couple's situation, including whether the man lives in or has traveled to an area with active Zika virus transmission and whether he develops symptoms of possible Zika infection. Couples with men who have confirmed Zika or symptoms of Zika should

consider using condoms or not having sex for at least 6 months after symptoms begin. This includes men who live in and men who traveled to areas with Zika. Couples with men who traveled to an area with Zika but did not develop symptoms of Zika should consider using condoms or not having sex for at least 8 weeks after their return in order to minimize risk. Couples with men who live in an area with Zika but have not developed symptoms might consider using condoms or not having sex while there is active Zika transmission in the area.

For More Information

- Current information from CDC on Zika, including countries and territories with active Zika virus transmission, is available at:
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- CDC guidance for health care providers is available at:
<http://www.cdc.gov/zika/hc-providers/index.html>
- Links to previous Health Advisories/Updates on Zika sent by the Missouri Department of Health and Senior Services (DHSS) are available at:
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Health Update:

Update 7: Zika Virus Infections – The Missouri Department of Health and Senior Services Recommends Zika Virus Screening as Part of Efforts to Prevent Local Transmission

June 28, 2016

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Health Update
June 28, 2016

**FROM: PETER LYSKOWSKI,
ACTING DIRECTOR**

SUBJECT: Update 7: Zika Virus Infections – The Missouri Department of Health and Senior Services Recommends Zika Virus Screening as Part of Efforts to Prevent Local Transmission

Surveillance for Zika virus is focused on human surveillance, rather than vector surveillance. Healthcare providers in the State of Missouri are essential partners in public health efforts to prevent local, vector-borne transmission in our communities. Please share this Health Update with healthcare providers in your area.

Zika Testing Methods

Testing for Zika virus infection using real-time reverse-transcription polymerase chain reaction (rRT-PCR) molecular assays is now commercially available under Emergency Use Authorizations (EUAs) issued by the Food and Drug Administration (FDA). The Centers for Disease Control and Prevention (CDC) recommends molecular testing using rRT-PCR for serum samples collected <7 days and urine samples collected <14 days after symptom onset. Urine should always be collected with a patient-matched serum specimen. (Please note: Only one commercial laboratory is approved to conduct Zika testing on urine.) A positive rRT-PCR test is confirmation of Zika virus infection.

Currently, commercial laboratories that offer rRT-PCR testing do not provide IgM antibody capture enzyme-linked immunosorbent assay (MAC-ELISA) testing with plaque reduction neutralization test (PRNT) confirmation and have no routine process to forward specimens to a public health laboratory.

Therefore, when requesting Zika rRT-PCR testing from a commercial laboratory, providers should retain an aliquot of the serum for MAC-ELISA testing if the rRT-PCR testing is negative and approved for further testing. Blood should be collected and processed per routine guidelines (collected in a serum separator tube with serum aliquots transferred to new vials), and one of the serum aliquots should be stored in a refrigerator (2-8°C) until it is known if additional IgM testing is indicated. If a serum aliquot cannot be stored or is not available, but further testing is indicated, a new blood sample should be collected. Serum samples for IgM testing should be collected from patients 4 days -12 weeks after symptom onset.

The Missouri State Public Health Laboratory (MSPHL) conducts Zika virus testing by RT-PCR on serum and urine specimens, and MAC-ELISA on serum specimens. All urine specimens must be accompanied by a patient-matched serum specimen. The test type for each specimen depends on the timing of specimen collection (**See Attachment A**). Specimens that test positive by MAC-ELISA are submitted for confirmation to CDC for PRNT testing. These results are reported as “presumptive positive” on the laboratory report that is mailed back to the submitter.

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Individuals who qualify for Zika testing through MSPHL include:

- Pregnant women that have traveled to areas with ongoing Zika transmission within the last three months **OR** with sexual exposure to a male partner infected with Zika virus
- Males or females of any age that have traveled to areas with ongoing Zika transmission within the last three months and developed symptoms of Zika **OR** with sexual exposure to a male partner infected with Zika virus
- Newborns and infants with symptoms of Zika whose mother traveled to an area with ongoing Zika transmission

Additional situations may be approved, such as when a fetus has been identified as having microcephaly by ultrasound and there is epidemiologic evidence suggesting Zika exposure. To date, no cases of local, mosquito-borne transmission of Zika have been reported in the United States. Should local, mosquito-borne transmission be suspected, the testing criteria may be expanded.

Healthcare Providers: For questions regarding Zika testing of patients or to request testing, please contact the Missouri Department of Health and Senior Services' (DHSS') Bureau of Communicable Disease Control and Prevention, Monday through Friday, 8:00AM to 5:00PM, at 573-751-6113; after hours/weekends, 800-392-0272 (24/7). For all other questions about Zika, contact DHSS' Office of Veterinary Public Health, Monday through Friday, 8:00AM to 5:00PM, 573-526-4780; after hours/weekends, 800-392-0272 (24/7).

Zika Virus Testing Exclusions

Testing for asymptomatic men or asymptomatic, non-pregnant women returning from travel to a Zika affected area and without relevant sexual exposure will not be approved. Most requests of this nature come from couples wanting to conceive following travel.

Screening for Zika Infection Risk: Prevention Counseling

DHSS recommends that providers screen women of reproductive age for Zika infection risk. Because most Zika cases identified in the U.S. have been associated with travel, this should include questions such as:

Do you plan to travel out of the country in the near future? Does your partner(s)?

These questions can start a conversation with your patient that can help them stay protected from Zika while traveling. CDC has published detailed traveler counseling guidance, found here: <http://www.cdc.gov/zika/pdfs/travelcounseling-fs.pdf>. For your convenience, snapshots of this document are provided as **Attachment B-1** and **Attachment B-2**.

Further Reading

Follow this link to the DHSS Zika Virus Disease website for medical and public health professionals: <http://www.cdc.gov/zika/hc-providers/index.html>

The American Congress of Obstetricians and Gynecologists (ACOG) published a Practice Advisory regarding Zika virus June 23, 2016. This can be found at this link:

<http://www.acog.org/About-ACOG/News-Room/Practice-Advisories/Practice-Advisory-Interim-Guidance-for-Care-of-Obstetric-Patients-During-a-Zika-Virus-Outbreak>

Zika virus specimen collection:

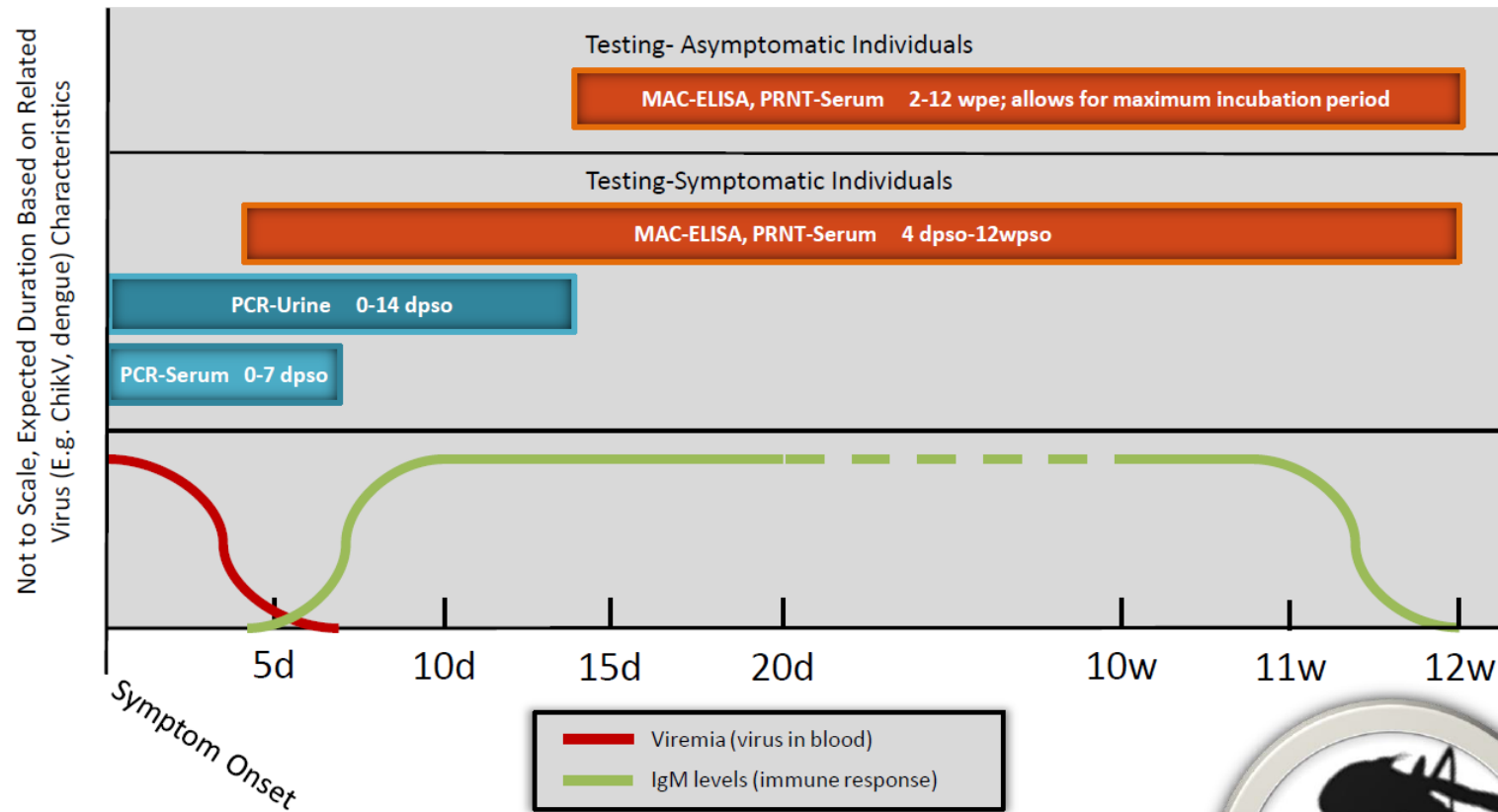
<http://www.cdc.gov/zika/hc-providers/body-fluids-collection-submission.html>

Interim guidance for Zika virus testing of urine:

<http://www.cdc.gov/mmwr/volumes/65/wr/mm6518e1.htm>

Attachment A

Zika Virus Detection Methods-for Illustrative Purposes Only



MAC-ELISA and PRNT testing both detect IgM antibodies, a substance produced by the body in response to an antigen. In this case, the Zika virus is the antigen.

PCR detects RNA from the Zika virus.

wpe – weeks post exposure
dpso – days post symptom onset
wpso – weeks post symptom onset



Attachment B-1

CDC's Response to Zika

Counseling Travelers

Women and Men of Reproductive Age Who are Considering Travel to Areas with Active Transmission of Zika Virus (ZIKV)



This guide describes recommendations to providers for counseling women and men of reproductive age who are considering travel to areas with active ZIKV transmission. This material includes recommendations from CDC's interim guidance¹ and talking points to cover while discussing recommendations.

Recommendation	Key Issues	Talking Points
Assess risk of ZIKV exposure and prevention	Environment	<p>Discuss whether Zika is being spread by mosquitoes in the planned area of travel (see CDC Zika Travel Information website*).</p> <p>Discuss environment in which patient will be staying: advise traveler to stay in hotel rooms or other accommodations that are air conditioned or have good window and door screens to keep mosquitoes outside.</p> <p>Discuss mosquito bite prevention, including insect repellent, clothing (including permethrin-treated²), and bed net use.</p>
Discuss ZIKV infection	<ol style="list-style-type: none"> Signs and symptoms of ZIKV disease Treatment When to seek care Preventing transmission after returning home 	<p>Many people infected with ZIKV won't have symptoms or will have only mild symptoms. The most common symptoms of ZIKV disease are fever, rash, arthralgias, and conjunctivitis; other common symptoms include myalgia and headache.</p> <p>Illness usually lasts about a week.</p> <p>ZIKV infection during or just before pregnancy may cause poor pregnancy and infant outcomes, including birth defects.</p> <p>Guillain-Barré syndrome is possibly triggered by ZIKV in a small proportion of infections, as it is after a variety of other infections.</p> <p>People who have possibly been exposed and develop symptoms consistent with ZIKV disease should see a healthcare provider and report their recent travel.</p> <p>If travelers develop symptoms of ZIKV disease, they should rest, stay hydrated, and take acetaminophen for fever or pain. To reduce the risk of hemorrhage, aspirin or other NSAIDs should not be taken until dengue can be ruled out.</p> <p>When travelers return from an area with ZIKV, they should take steps to prevent mosquito bites for 3 weeks if they have no symptoms of ZIKV disease (or for the first week after onset if they develop symptoms) so they do not pass ZIKV to mosquitoes that could spread the virus to the community.</p>
Discuss ZIKV infection and pregnancy	Possible adverse outcomes of ZIKV infection during pregnancy	<p>ZIKV can be passed to the fetus during pregnancy or at delivery if a woman is infected around the time of conception or during pregnancy.</p> <p>ZIKV infection during pregnancy can cause microcephaly and other severe fetal brain defects.</p> <p>Children with microcephaly often have serious problems with development and can have other neurologic problems, such as seizures.</p> <p>ZIKV has been linked to other problems in pregnancies and among fetuses and infants infected with ZIKV before birth, such as miscarriage, stillbirth, defects of the eye, hearing deficits, and impaired growth.</p> <p>There is no evidence that ZIKV infection poses an increased risk for birth defects in future pregnancies after the virus has cleared from the blood.</p>

www.cdc.gov/zika

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U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Attachment B-2

Recommendation	Key Issues	Talking Points
Assess pregnancy plans related to timing of travel	<ol style="list-style-type: none"> 1. Timing of conception 2. Avoiding travel to areas of active ZIKV transmission while pregnant 	<p>CDC recommends that women who are pregnant not travel to any area with active ZIKV transmission.</p> <p>If a pregnant woman must travel to one of these areas, discuss potential risks and the steps she should take to prevent mosquito bites during the trip.</p> <p>If a traveler is planning to try to conceive either while traveling or after returning, there are important recommendations s/he needs to be aware of, including waiting to conceive. There are different recommendations for women and for men based on whether or not they develop symptoms consistent with ZIKV disease during or after travel (see table below).</p>
Discuss ZIKV infection – risk of sexual transmission and need for contraception	<ol style="list-style-type: none"> 1. Preventing sexual transmission 2. Contraception 	<p>ZIKV can also be transmitted through sex with a male partner.</p> <p>Men might be bitten by a mosquito and become infected with ZIKV and then infect their sex partners.</p> <p>Patients should be advised to take the following steps to protect themselves from sexual transmission of ZIKV:</p> <ol style="list-style-type: none"> 1. If a man develops symptoms of ZIKV disease, he should use a condom the right way, every time he has vaginal, anal, or oral (mouth-to-penis) sex or should not have sex for 6 months after illness starts. 2. If a man does not develop symptoms of ZIKV disease, he should still use condoms for at least 8 weeks after the last date of exposure (the last day he is in an area with active ZIKV transmission) to avoid sexual transmission to his partner. This is especially important if he has any plans to try to conceive with his partner after returning from travel. <p>To avoid conceiving for the advised periods of time (see table below), a woman or couple should also use the most effective contraceptive methods that can be used correctly and consistently (See <i>Effectiveness of Family Planning Methods</i>: http://www.cdc.gov/reproductivehealth/unintendedpregnancy/pdf/contraceptive_methods_508.pdf).</p>

Length of time to wait to conceive after travel to areas with active Zika virus transmission

One or more symptoms of ZIKV disease (fever, rash, arthralgia or conjunctivitis)	Female traveler	Male traveler
Yes	Wait at least 8 weeks after symptom onset to try to conceive	Wait at least 6 months after symptom onset to try to conceive with partner
No	Wait at least 8 weeks after last date of exposure to try to conceive	Wait at least 8 weeks after last date of exposure to try to conceive with partner

Related websites:

Zika Virus - <http://www.cdc.gov/zika/index.html>

* Zika Travel Information - <http://wwwnc.cdc.gov/travel/page/zika-travel-information>

Guillain-Barré Syndrome - <http://www.cdc.gov/zika/about/gbs-ga.html>

Zika Virus Prevention - <http://www.cdc.gov/zika/prevention/index.html>

For Providers Caring for Women with Possible ZIKV Exposure -

<http://www.cdc.gov/zika/hc-providers/ga-pregnant-women.html>

Zika Transmission & Risks - <http://www.cdc.gov/zika/transmission/index.html>

Zika Symptoms, Diagnosis & Treatment - <http://www.cdc.gov/zika/symptoms/index.html>

**** For updates, please check <http://www.cdc.gov/zika/hc-providers/index.html>; updated clinical guidance is marked as "UPDATE" ****

References:

1. Petersen EE, Polen KN, Meaney-Delman D, et al. Update: Interim Guidance for Health Care Providers Caring for Women of Reproductive Age with Possible Zika Virus Exposure - United States, 2016. *MMWR* 65(12):315-22.
2. In some places, such as Puerto Rico, there is widespread permethrin resistance, and it is unlikely to be effective. Contact local authorities or a mosquito control district for more information on pesticides.

Missouri Department of Health & Senior Services

Health Update:

Update 1: Mumps Outbreak in Missouri

December 8, 2016

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.health.mo.gov>.

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

Health Alerts convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies or the public.

Health Advisories provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

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Health Update
December 8, 2016

**FROM: PETER LYSKOWSKI,
DIRECTOR**

SUBJECT: Update 1: Mumps Outbreak in Missouri

On November 18, 2016, the Missouri Department of Health and Senior Services (DHSS) released a Health Advisory entitled "Mumps Cases in Central Missouri". The purpose of the Advisory was to alert health care providers of the outbreak of mumps among Missouri college students, and to provide guidance on clinical and laboratory diagnosis, and measures to control infection transmission. This notification is available at:

<http://health.mo.gov/emergencies/ert/alertsadvisories/pdf/advisory111816.pdf>.

This Health Update provides new information on the status of the outbreak, and alerts all health care providers across Missouri to be vigilant regarding mumps in any patient epidemiologically linked to the outbreak at the University of Missouri in Columbia.

The Columbia/Boone County Department of Public Health and Human Services (CBCDPHHS), other local public health agencies (LPHAs) in Missouri, and DHSS continue to receive additional reports of mumps cases among persons associated with the University of Missouri in Columbia (MU). A total of 193 laboratory-confirmed and probable cases of mumps have been reported as of December 7, 2016. Although the majority of cases continue to be reported among university students, new cases epidemiologically linked to the outbreak are now beginning to occur in persons outside of the university setting. Students and other persons potentially exposed to mumps have and will continue to travel, especially during the holidays and at the end of the fall semester. Health-care providers should maintain a high index of suspicion for mumps among persons with symptoms compatible with the disease, and mumps should not be ruled out because of history of appropriate vaccination in a person with suspected mumps.

Mumps continues to have a presence on the MU campus despite the implementation of traditional control measures. An additional control measure for consideration during mumps outbreaks is the use of a third dose of measles, mumps, and rubella (MMR) vaccine. This approach has been used during prior mumps outbreaks in university settings. While no formal recommendations exist, and the effectiveness of a third MMR dose has not been clearly established, the Centers for Disease Control and Prevention (CDC) has provided guidelines for considering its use during outbreaks. Factors that might trigger this recommendation include outbreaks among populations with 2-dose MMR vaccination (coverage of >90%), intense exposure settings such as universities, evidence of sustained transmission (>2 weeks), and high attack rates (>5 cases per 1,000 population). An analysis of the data associated with this outbreak confirms each of these criteria has now been met. The University of Missouri in collaboration with the CBCDPHHS and DHSS are now recommending a third dose of MMR vaccine for MU students unless otherwise contraindicated. Information provided by the University of Missouri is available at: <http://studenthealth.missouri.edu/needtoknow/mumps.html>.

DHSS and CDC also recommend the following infection control measures for patients known or suspected of having mumps:

- In a healthcare setting: use droplet precautions, in addition to standard precautions, for 5 days after onset of parotitis
- Isolation in the community: The patient should stay home, not go to school or work, and avoid prolonged, close contact with other people until at least 5 days after onset of parotitis
- Cover mouth and nose with a tissue or in the elbow when coughing or sneezing, not the hands
- Wash hands often with soap and water
- Avoid sharing drinks or eating utensils
- Disinfect frequently touched surfaces, such as toys, doorknobs, tables, counters

Persons who were contacts of a mumps case during the 2 days prior through 5 days after onset of parotitis in a diseased person should be identified, assessed for evidence of immunity (see <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm>, Table 3), and offered vaccine as appropriate. In addition, all contacts should be educated on the symptoms of mumps, instructed to watch for symptoms from 12 to 25 days after the last exposure, and told to isolate themselves and contact their medical provider and their local health department if symptoms develop.

The Missouri State Public Health Laboratory (MSPHL) provides laboratory support for the diagnosis of mumps infections occurring in Missouri. Laboratory testing should be performed if mumps is suspected. Specimen collection should include a buccal, nasopharyngeal, or throat swab specimen in viral transport; **AND** blood specimens. **Note:** before any specimen is sent to MSPHL, DHSS must first be consulted for approval for testing as resources are limited and to ensure appropriate testing. Health care providers caring for a patient suspected of having mumps should contact their LPHA, or DHSS at 573/751-6113 or 800/392-0272 (24/7), to report suspected cases of mumps and to discuss testing at MSPHL.

For more information and guidance on mumps including, but not limited to, the challenges and availability of laboratory testing, laboratory results interpretation, controlling transmission, and links to additional resources, please visit the DHSS Health Advisory “Mumps Cases in Central Missouri” released on November 18, 2016, at:

<http://health.mo.gov/emergencies/ert/alertsadvories/pdf/advisory111816.pdf>.

Questions should be directed to DHSS’ Bureau of Communicable Disease Control and Prevention at 573/751-6113 or 800/392-0272 (24/7).